REMARKS

Upon entry of this amendment, claims 1 and 4-24 are all the claims pending in the application. Claims 2 and 3 are canceled by this amendment.

Applicants note that a number of editorial amendments have been made to the specification and abstract for grammatical and general readability purposes. No new matter has been added.

I. Claim Rejections under 35 U.S.C. § 103(a)

The Examiner has rejected claims 1, 2 and 4-24 under 35 U.S.C. § 103(a) as being unpatentable over Tsutsumi et al. (U.S. 5,963,000); and has rejected claim 3 under 35 U.S.C. § 103(a) as being unpatentable over Tsutsumi et al. in view of Script et al. (U.S. 2004/0113778).

Applicants note that original claim 3 recited the feature of at least one sensor that employs geomagnetism and/or at least one sensor that employs at least one gyroscope. By this amendment, claim 1 has been amended to limit the sensor to one that employs geomagnetism, and claim 3 has been canceled.

In particular, claim 1 now recites that the at least one door position detector includes at least one sensor which employs geomagnetism to detect the at least one angular displacement position of the at least one door body. Applicants respectfully submit that the cited prior art fails to disclose, suggest or otherwise render obvious at least this feature of claim 1.

The Examiner recognizes that Tsutsumi fails to disclose or suggest the above-noted feature recited in claim 1 (see Office Action at page 6). Further, Applicants note that the Examiner has applied Script for the teaching of a sensor that employs a gyroscope.

In particular, Script discloses a motion detector 20 which uses two gyroscopic sensors 400A and 400B (see paragraph [0138]). As explained in Script, each gyroscopic sensor is oriented to sense movement in a plane defined by two geometric axes (see paragraph [0138]). Thus, one of the sensors can be used to monitor motion having an x component and/or a y component, and the other sensor can be used to monitor motion having a z component (see paragraph [0138]).

Thus, while Script discloses a sensor which each employs a gyroscope, Applicants respectfully submit that Script does not teach or suggest a sensor which employs geomagnetism, as recited in amended claim 1. Moreover, Applicants respectfully submit that it would not have been obvious to one of ordinary skill in the art to substitute a sensor which employs a gyroscope with a sensor that employs geomagnetism.

In the present invention, by utilizing a sensor which employs geomagnetism, real-time detection of a door position can be calculated based on geomagnetism of the earth such that a position of the door can be determined irrespective of whether the door speed is accelerating, decelerating, or constant.

In contrast, calculating a door position with a sensor that employs a gyroscope can obtain only one door speed parameter, namely, acceleration. Thus, for calculation of a door position using a sensor employing a gyroscope, even if a door moves at a constant speed or decreasing speed, the gyroscope will consider such speed as acceleration, thus resulting in a calculation error.

In view of the foregoing, Applicants respectfully submit that the combination of cited prior art fails to disclose, suggest or otherwise render obvious the above noted feature recited in claim 1. Accordingly, Applicants respectfully submit that claim 1 is patentable over the cited prior art, an indication of which is kindly requested.

Claims 4-24 depend from claim 1 and are therefore considered patentable at least by virtue of their dependency. As noted above, claims 2 and 3 have been canceled by this amendment.

II. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may best be resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Junichiro OKABE et al.

By: Kenneth Fields

Kenneth W. Fields
Registration No. 52,430
Attorney for Applicants

KWF/abm
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
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